WHAT IS CLAIMED IS:

1. A magnetoresistive sensor comprising:

a stack of magnetoresistive layers including an anti-ferromagnetic layer, a pinned layer, a non-magnetic layer, and a free layer;

an underlayer of said stack of magnetoresistive layers;

a magnetic domain control film; and

a pair of electrode films for supplying current to said stack of magnetoresistive layers;

wherein a center position of an upper surface and a lower surface of said magnetic domain control film is positioned within a range of an upper surface and a lower surface of said free layer; and

further comprising:

an underlayer formed below said magnetic domain control film; and

an amorphous metal film layer formed below said underlayer for controlling crystallization of said underlayer.

2. A magnetoresistive sensor according to claim 1, wherein

said stack of magnetoresistive layers comprises said underlayer, said anti-ferromagnetic layer, said pinned layer, said non-magnetic layer, said free layer and a protection layer formed in this order from the lower layer to the upper layer.

3. A magnetoresistive sensor according to claim 1, wherein

said stack of magnetoresistive layers comprises said underlayer, said anti-ferromagnetic layer, said pinned layer, said non-magnetic layer, said free layer, said upper non-magnetic layer, said upper pinned layer, said upper anti-ferromagnetic layer and a protection layer formed in this order from the lower layer to the upper layer.

4. A magnetoresistive sensor according to claim 1, wherein

said stack of magnetoresistive layers comprises said underlayer, said free layer, said upper non-magnetic layer, said upper pinned layer, said upper anti-ferromagnetic layer and a protection layer formed in this order from the lower layer to the upper layer.

5. A magnetoresistive sensor according to claim 1, wherein

said amorphous metal film layer is formed on any one of surfaces within a range from a lower surface of said underlayer to an upper surface of said non-magnetic layer of said stack of magnetoresistive layers.

6. A magnetoresistive sensor according to claim 1, wherein

said magnetoresistive sensor has a structure in which a lower surface of said free layer is flush with a lower surface of said magnetic domain control film, and a bias magnetic field of said magnetic domain control film is mainly applied to said free layer.

7. A magnetoresistive sensor according to claim 6, wherein

said underlayer is formed of Cr or Cr alloy and comprise a body-centered cubic lattice (BCC) polycrystal thin film, and polycrystal orientation to formed plane is isometric random crystal orientation having no particular crystal orientation.

8. A magnetoresistive sensor according to claim 1, wherein

said magnetic domain control film is formed of a Co alloy film, said underlayer disposed below said magnetic control film controls a crystallization state of said magnetic domain control film, and said amorphous metal film layer controls a crystallization state of said underlayer.

9. A magnetoresistive sensor according to claim 1, wherein

said magnetic domain control film is formed of a Co alloy film, said underlayer is formed of a Cr or Cr alloy film, and said amorphous metal film layer is formed of an Ni series alloy or Co series alloy film.

10. A magnetoresistive head constituted by using a magnetoresistive sensor according to claim 1.

11. A magnetoresistive sensor comprising:

a stack of magnetoresistive layers including an anti-ferromagnetic layer, a pinned layer, a non-magnetic layer, and a free layer;

an underlayer of said stack of magnetoresistive layers;

a magnetic domain control film; and

a pair of electrode films for supplying current to said stack of magnetoresistive layers;

wherein a center position of an upper surface and a lower surface of said free layer is positioned within range of an upper surface and a lower surface at a position near an end of said magnetic domain control film; and

further comprising:

an underlayer formed below said magnetic domain control film and

an amorphous metal film layer formed below said underlayer for controlling crystallization state of said underlayer.

12. A magnetoresistive sensor according to claim 11, wherein

said stack of magnetoresistive layers comprises said underlayer, said anti-ferromagnetic layer, said pinned layer, said non-magnetic layer, said free layer and a protection layer formed in this order from the lower layer to the upper layer.

13. A magnetoresistive sensor according to claim 11, wherein

said stack of magnetoresistive layers comprises said underlayer, said anti-ferromagnetic layer, said pinned layer, said non-magnetic layer, said free layer, said upper non-magnetic layer, said upper pinned layer, said upper anti-ferromagnetic layer and a protection layer formed in this order from the lower layer to the upper layer.

14. A magnetoresistive sensor according to claim 11, wherein

said stack of magnetoresistive layers comprises said underlayer, said free layer, said upper non-magnetic layer, said upper pinned layer, said upper anti-ferromagnetic layer and a protection layer formed in this order from the lower layer to the upper layer.

15. A magnetoresistive sensor according to claim 11, wherein

said amorphous metal film layer is formed on any one of surfaces within a range from a lower surface of said underlayer to an upper surface of said non-magnetic layer of said stack of magnetoresistive layers.

16. A magnetoresistive sensor according to claim 11, wherein said magnetoresistive sensor has a structure in which a lower surface of said free layer is flush with a lower surface of said magnetic domain control film, and a bias magnetic field of said magnetic domain control film is mainly applied to said free layer.

17. A magnetoresistive sensor according to claim 16, wherein said underlayer is formed of Cr or Cr alloy and comprise a body-centered cubic lattice (BCC) polycrystal thin film, and polycrystal orientation to formed plane is isometric random crystal orientation having no particular crystal orientation.

18. A magnetoresistive sensor according to claim 11, wherein said magnetic domain control film is formed of a Co alloy film, said underlayer disposed below said magnetic control film controls a crystallization state of said magnetic domain control film, and said amorphous metal film layer controls a crystallization state of said underlayer.

19. A magnetoresistive sensor according to claim 11, wherein said magnetic domain control film is formed of a Co alloy film, said underlayer is formed of a Cr or Cr alloy film, and said amorphous metal film layer is formed of an Ni series alloy or Co series alloy film.

20. A magnetoresistive head constituted by using a magnetoresistive sensor according to claim 11.

21. A method of manufacturing a magnetoresistive sensor comprising:

(1) forming a multi-layered film containing an anti-ferromagnetic layer, a pinned layer, a non-magnetic layer and a free layer continuously and collectively in a vacuum on a substrate;

(2) applying a lift-off resist to form a track width on said continuous film;

(3) removing a region not applied with said lift-off resist to said non-magnetic layer, to said pinned layer, to said anti-ferromagnetic layer, or to an intermediate layer of said anti-ferromagnetic layer by utilizing ion beams or the like with a good reproducibility;

(4) forming an amorphous layer, an underlayer, a magnetic domain control layer and an electrode film layer at a region in which a portion of said multi-layered film is removed; and

(5) removing said resist for lift-off.

22. A method of manufacturing a magnetoresistive sensor according to claim 21, wherein

forming said amorphous metal film layer, a surface oxidation layer of said amorphous metal film layer, said underlayer, said magnetic domain control film and said electrode film are conducted continuously in one identical vacuum vessel.